User manual

Polyquick

Fig. Polyquick

WASSERMANN DENTAL-MASCHINEN

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WASSERMANN DENTAL-MASCHINEN GMBH

Dear customer,

Thank you for choosing a product from the Wassermann range. Wassermann dental equipment incorporates the highest standards of quality and the latest technology. In order to enjoy maximum performance and years of trouble-free operation from the equipment, please read this user manual carefully before you start work, and operate the unit according to the recommended guidelines.
Please ensure that all persons operating the equipment have read and understood this user manual.

Keep this user manual on hand for ready reference.

Company address:
Wassermann Dental-Maschinen GmbH
Rudorffweg 15-17
D-21031 Hamburg
Germany
Tel.: +49 (0)40/ 730 926 - 0 Fax.: +49 (0)40/ 730 37 24
e-mail: info@wassermann-dental.com
URL: http// www.wassermann-dental.com

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1 Features

Depending on your requirements, you can set the polymerisation time manually to the maximum or automatically to a shorter period. All functions are available in both cases.
The polymerisation time is adjustable up to 59 hours and 40 minutes. The maximum pressure is 6 bar, and this is maintained by a non-return valve. The required polymerisation temperature can be set in 5 stages up to 95°C. The heater cuts off automatically when the set temperature is reached, so overheating is not possible. The unit has a dry-run safety device, which prevents it overheating, and a door safety switch, which releases the compressed air only when the door is fully closed.

2 For your safety

2.1 Your user manual

Configuring and operating this equipment requires precise knowledge and observance of the instructions in this user manual. The equipment is designed only for its intended application.
Very important features are indicated as follows in this manual:

Warning!
This is a warning of risk situations and dangers. Failure to observe this warning could be life-threatening. These warnings must be observed.

Information!
This symbol draws your attention to specific features, which should be noted.

2.2 Safety guidelines

The equipment is designed for a mains voltage of 230V / 50Hz. Make sure that the unit is connected to the correct mains voltage.
Always disconnect the mains plug before carrying out maintenance or cleaning work.
The safety valve on the pressure vessel opens automatically if the operating pressure exceeds 7 bar.
The pressure is switched on only after the door is fully closed, thanks to a safety contact and an orange monitor light.
Dry-run protection switches off at 112°C (brown knob, left side of unit)

2.3 Responsibility for operation and damage

The responsibility for operating the unit lies exclusively with the owner or user if the said unit is incorrectly serviced, maintained or altered by persons not employed by an accredited dealer or if the unit is used in a manner contrary to its specified purpose.
The unit must be maintained and operated in accordance with this user manual. Wassermann Dental-Maschinen GmbH is not responsible for damage arising from the ***non-observance*** of these instructions.
Guarantee and responsibility provisions contained in the sales and supply conditions of Wassermann Dental-Maschinen GmbH are not extended by these instructions.

Ensure that this user manual is accessible <u>at all times</u> and has been read and understood.

3 Applications

The Polyquick is a pressure polymerisation unit for the hot and cold polymerisation of plastics.
It can be set to a maximum temperature of 95°C and a maximum polymerisation pressure of 6 bar. For automatic operation, you can select a polymerisation time between 2 minutes and 59 hours 40 minutes; in manual mode, the polymerisation time is the maximum time.

4 Before you start

4.1 Unpacking / Transport

- Open the cartons, remove the packing materials, and carefully lift out the instrument and accessories. Check the accessories are correct (see 10).
- When transporting the unit, use appropriate packing materials to avoid accidental damage.

4.2 Set-up/Storage

- Set the unit up on a flat surface.
- Always ensure that the work area is sufficiently large (take the unit's dimensions into account). **Do not set it up out of doors**.
- If the unit is to be stored for an extended period, protect it from moisture and dust.
- Make the following connections **before** starting the unit:
    1. Insert the mains plug in the socket, making sure that the mains and the unit operate on the same voltage.
    2. Connect up a compressed-air supply of ***at least 3.5 bar***. If using a long hose, make sure its ID is at least 6 mm. Provide each compressed-air hose with a maintenance unit and use a regulator to set the pressure to a constant level.

5 Start-up

Important!

Make sure the unit has reached room temperature before you start it.

Never operate the unit without water as the heater climbs immediately to 50°C as soon as the power comes on.

5.1 Setting the correct pressure

Before filling the container, you should remove the accessory and set the correct polymerisation pressure. To do so:

1. Turn on the main switch (green rocker switch).
2. Close the cover and check the door contact (6) control light is on.
3. Turn off the heater switch (1); the red LED in the switch will go out.
4. Switch on the pressure (2) and the Start/Stop switch (10) containing the red LED. **The pressure is preset to 6 bar at the factory.**
5. If the pressure is too **low** (**min. 3.5 bar**), increase it using the black control at the rear of the unit (max. 6 bar). You have to pull the control out to change it and then push it in again.
6. If the pressure is too **high**, turn off pressure switch (2) and let the pressure reduce. The pressure regulator at the rear of the unit must be turned several times in the “minus“ direction. Then, put the chamber under pressure. The desired pressure, (**max. 6 bar**), is set by turning the regulator in the “plus“ direction.
7. Use the Start/Stop switch (10) to turn the unit off.

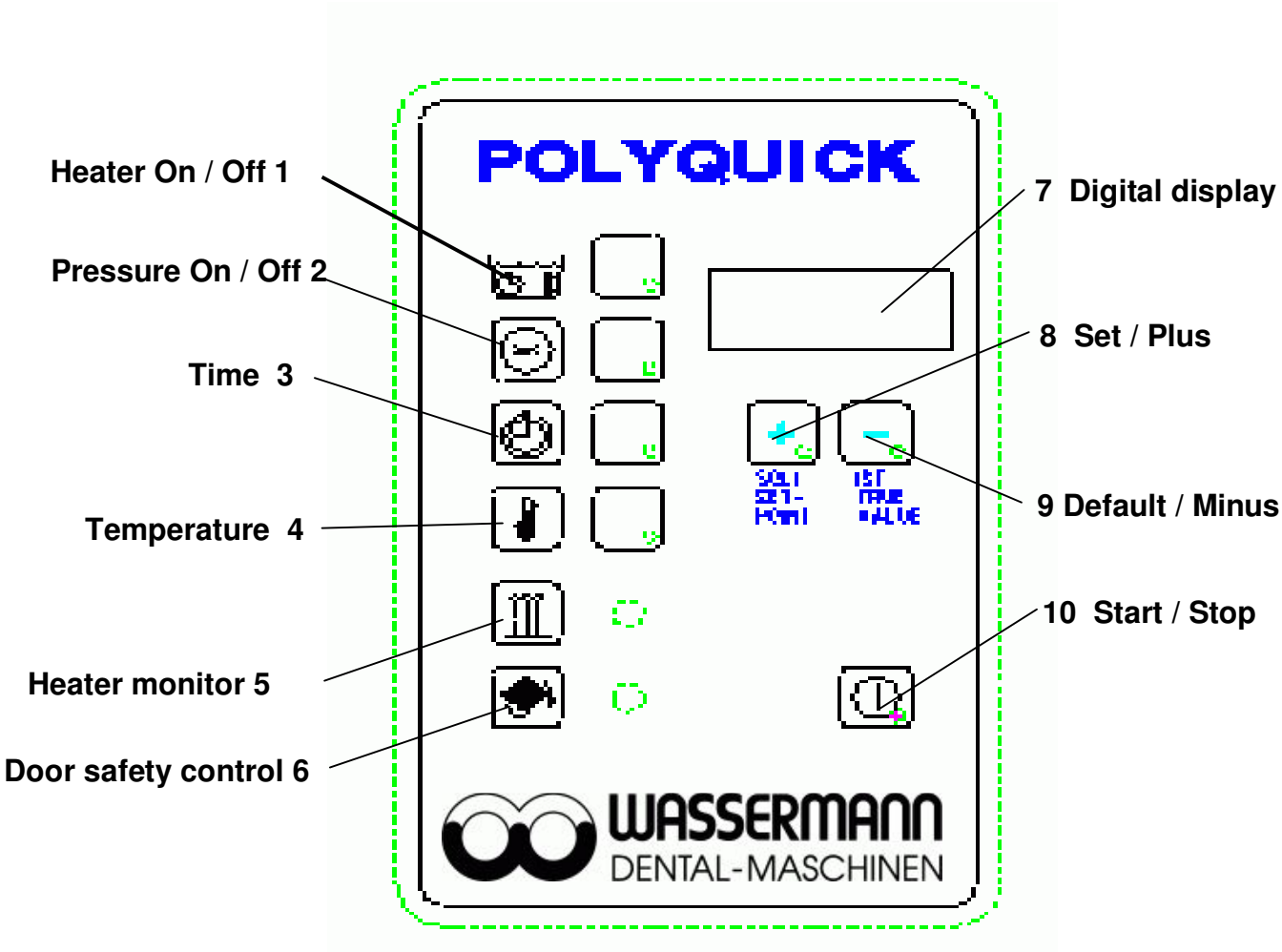
6 Use

All instructions for using the unit, whether verbal, written or in the form of practical guidance, are based on individual experience and experimentation and can only be regarded as guidelines. Because of the thermodynamic processes involved, and depending on the duration of the heating phase, there can be variations between the set temperature and the water temperature of up to 2°C or so.

Factory settings:

Heating	50°C
Time	10 min.
Pressure	6 bar

Turning on the main switch sets the pre-programmed heater temperature to 50°C. This temperature is independent of any previously set temperature. When the set temperature button (8) is pressed, the heater temperature is overridden and the unit increases to the last set temperature.
Before starting the timer, allow a warm-up period of about 30 minutes.



6.1 Filling and switching on

1. Open the lid.
2. Insert the filled container, fill with water until all polymerisation components are covered (max. up to the indent in the container), then close the lid fully.
3. Turn on the main switch; the unit heats **automatically** to 50°C.

6.2 Programming

Time:

- Press Time (3) and Set / + (8).
- Keep Time (3) pressed and set the value using Set / + (8) and Default / - (9).

Temperature:

- Press Temperature (4) and Set / + (8).
- Keep Temperature (4) pressed and set the value using Set / + (8) and Default / - (9).

The values are stored automatically when you start the program with Start/Stop (10).

Time ranges:

up to 30 min = 2nd step

up to 120 min = 5th step

above 120 min = 20th step

Temperature ranges:

from 0°C to 95°C in 5 steps

from 95°C the program reverts to 20°C.

6.3 Operation:

The polymerisation period must be set and either hot or cold and/or pressure polymerisation chosen.

6.3.1 Automatic operation:

- Set the program to the desired polymerisation time and temperature (see 6.2).
- For hot polymerisation, press Heater (1); the yellow LED (lower) comes on while the unit heats up.
- For pressure polymerisation, press Pressure (2).
- After the unit has reached the selected temperature, press Start/Stop (10) to start the program.
- When the program has finished, you will hear a 10-second tone to tell you that the unit must be switched off by pressing Start/Stop (10).
- **The pressure is released when you press Start/Stop (10), but Heater (1) must be pressed to turn off the heating.**
- **The lid can only be opened when the pressure gauge reads 0.**

Warning: Scalding risk with hot polymerisation.
Open the lid slowly!

6.3.2 Manual operation:

- Set the program to max. time and the desired temperature (see 6.2).
- For hot polymerisation, press Heater (1); the yellow LED (lower) comes on while the unit heats up.
- For pressure polymerisation, press Pressure (2).
- After the unit has reached the selected temperature, press Start/Stop (10) to start the program.
- Polymerisation can be stopped at any time by pressing Start/Stop (10). There is no audible signal.
- **The pressure is released when you press Start/Stop (10), but Heater (1) must be pressed to turn off the heating.**
- **The lid can only be opened when the pressure gauge reads 0.**

Warning: Scalding risk with hot polymerisation.
Open the lid slowly!

If the pressure in the compressed-air supply line drops during the process, a non-return valve will maintain the current pressure.

The pressure chamber can only be opened once the pressure has dropped *completely* to 0.

The heater has a temperature safety device, which switches the heater off automatically at about 112°C. It can only be started again once the unit has cooled down. To do so, press the reddish-brown rubber knob on the left-hand side of the housing – you'll hear it click into place. The program contains a safety command inserted at the factory, which switches the heater off automatically when the temperature exceeds 99°C.

6.4 Draining the water

Warning: Before you drain the water, check that the drain hose ends in a bucket or washbasin. For your own safety, it should be fixed in place.

Darin the water carefully as it can be very hot!

Procedure:

- Close the lid completely; LED (6) must go out.
- Turn on main switch (green) and turn off Heater (1).
- Pressurise the chamber by pressing Pressure (2) and Start/Stop (10).
- Open the drain valve (black knob, lower left side) **slowly**.
- After draining the water, press Start/Stop (10) and close the drain valve.
- Turn the mains switch to "0"

7 Troubleshooting / Correcting errors

Fault	Likely cause	Likely solution
Pressure does not increase in chamber	Lid seal O-ring faulty	Check O-ring and replace if necessary
	Pressure regulator set to 0 (pressure gauge).	Check pressure and adjust if necessary
	Door not fully closed	Close door against safety contact or contact faulty
Chamber does not get hot	Heater not switched on	Switch heater on
	Temperature monitor switched off or faulty	Press in safety knob (left side of unit) and/or replace knob Repair (Service Workshop)
	Faulty heater	Repair (Service Workshop)
Display blank	Temperature monitor off or faulty	Press in safety knob (left side of unit) and/or replace knob Repair (Service Workshop)
Unit does nothing	Blown fuse	Replace fuse at rear of unit

If the above recommendations do not solve the problem, contact your dental depot or our Service department.

8 Maintenance

8.1 Cleaning

The unit should be rinsed out at least **once per week** to ensure problem-free operation. **After** rinsing, remove and clean the sieve in the base of the chamber.

Solvents **must not** be used to clean the mounting plate!

The **model plate** must always be legible and should not be removed.

8.2 Servicing

Check the door seal (Item no. 380032) regularly for damage. To do so, remove the ring (red silicone ring) from its groove using a round-ended pair of tweezers. The seal groove **must** always be clean.

The seal **must** be inserted in the groove using Vaseline or oil.

The door safety switch should be checked by opening and closing the door several times; you should hear a slight click each time. The seal should be replaced every 18 months.

9 Warranty

The warranty period for our instruments is 12 months. If faults occur within the warranty period, contact your dental depot or get in touch directly with our Service department.
Your Polyquick should only be operated in perfect condition. If faults occur which could harm operators or third parties, the unit should not be used until it has been fixed.

This warranty does not cover damage caused by improper use, external mechanical causes, transport damage or interference with the unit by unauthorized persons.

10 Spare parts and accessories

Spare parts	
Item number	Description
170532	Control valve
170005	Network board, new
170575	Switch cover, sticky-backed
170590	Board controller
170561	Filter
170568	Drain, compl.
291009	"BND Model" knob
310005	Sticker – Risk of scalding
310009	Sticker – Pull mains plug
310065	Directional arrow, left, white
320023	PA hose 2.6 x 0.8 Wd. natural
328008	Pressure gauge
380032	O-ring D 166,4 x 3,8
392008	Rubber foot 32 x 32 H6 b/w self-sticking
392026	Elastic damper D 8-H 1.6 self-sticking
511087	Temperature limiter 112°C
511091	Rocker switch, green
511118	Protective cap for rocker switch
510011	Micro-switch, positive opening

Accessories		
Item number	Qty	Description
170508	1	Denture stirrup mount
170517	1	Denture holder
320026	2 m	PVC hose D 8 x 6 woven (blue)
320038	2 m	PVC hose D 6 x 3 (1/4") woven
582013	2	Fuse 6.3 A / 250 V MT D 5 x 20

10.1 Repairs

Servicing or repairs to the unit must only be carried out by trained technicians.
Only original spares are to be used.
Responsibility for the product is voided if altered by unauthorized persons or if inappropriate components are installed.

11 Technical data

11.1 170999 POLYQUICK

Voltage:	230 V / 50 Hz
Power consumption:	4,2 A
Output:	1000 W
Comp. air supply:	min. 4 bar
Pressure chamber:	Ø 150 mm, depth 285 mm
Versions:	3 dentures or 2 resin dentures or 3 underbite mounts and/or 6 regulators
Operating pressure:	max.6 bar
Overall size:	Width 340 mm Height 435 mm Depth 355 mm
Weight:	21 kg

Noise emission ***≤70 dB(A)***

We reserve the right to make technical changes.

12 EC CONFORMITY CERTIFICATE

in accordance with 73/23/EWG (low-voltage guidelines) modified by 93/68/EWG and 89/336/EWG (EMV guidelines) and 89/392/EWG (Machinery guidelines), with modifications

Manufacturer:	W A S S E R M A N N Dental-Maschinen GmbH Rudorffweg 15 - 17 D-21031 Hamburg	Product description:	Pressure polymerisation unit for dental applications

Model: Polyquick (170999)

Applicable standards: EN 61010-1:1993 + A2:1995
EN 50081-1 + EN 50082-1
Pressure vessel ordinance
DIN 45635 Pt.1

Hiermit wird bestätigt, dass die oben bezeichnete Maschine den genannten EG-Richtlinien entspricht. Diese Erklärung wird ungültig, falls die Maschine ohne unsere Zustimmung verändert wird.

This is to confirm that the above mentioned machine complies with the described EC rules. This declaration becomes invalid if the machine is modified without our approval.

Cette machine est conforme aux normes en vigueur de la Communité Européene. Cet avis est nul et non avenant si cette machine est modifiée sans notre accord.

Esta máquina, anteriormente mencionada, cumple con los limites requeridos por el reglamento EC. Ahora bien, esta declaración quedará invalidada en caso de realizar modificaciones al aparato sin nuestra aprobación.

Hiermee wordt bevestigd dat bovengenoemde machine voldoet aan de voorgeschreven EU normen. Deze verklaring verliest geldigheid als er zonder onze uitdrukkelijke toestemming wijzigen aan de machine worden aangebracht.

Place, date: Hamburg, 10 Sept 2003 Company stamp:

WASSERMANN DENTAL-MASCHINEN GMBH
Rudorffweg 15-17 · 21031 Hamburg

Signed: _____
Wilfried Wassermann
(Managing Director)

WASSERMANN Dental-Maschinen GmbH
Rudorffweg 15 – 17, D-21031 Hamburg

Tel.: + 49 (0)40 / 730 926 – 0
Fax: +49 (0)40 / 730 37 24

e-mail: info@wassermann-dental.com

Internet: http://www.wassermann-dental.com